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The Bagworm

The bagworm (Thyriodopteryx ephemeraeformis (Haw.)) is a common pest of arborvitae and red cedar, or juniper. It will also feed on pine, spruce, hemlock, willow, maple, sycamore, black locust, and many other evergreen and deciduous trees and shrubs. It occurs from southern New England west to Kansas and south to Florida and Texas.

The caterpillars, or larvae, of this insect form spindle-shaped silken bags, in which they live while feeding and moving about on their host trees. Pieces of the foliage on which the larvae are feeding are attached to the outside of the bags. These bags are very tiny at first and are easily overlooked, but are gradually enlarged as the caterpillars within them increase in size. Bags containing mature caterpillars are often nearly 2 inches long.

Habits and Life History

The bagworms overwinter in the egg stage in bags which females constructed during the previous summer. The eggs hatch late in the spring (early June in the vicinity of Washington, D. C.) and the tiny larvae leave the old bags and crawl to foliage nearby where they begin to feed and spin new bags for themselves. A large number of larvae may be present on a tree early in the summer without causing conspicuous defoliation. The rate of feeding increases very rapidly during the latter part of July and during August as the larvae become older, and at this time they may complete the defoliation of a tree within a week or 10 days. They will then move to other trees or shrubs if they need additional food to complete their development. The older larvae are less particular about their food and will feed on many different species of plants.

The caterpillars become mature about the end of August, in the latitude of Washington, D. C. They then attach their bags firmly to the twigs of the tree or shrub where they have been feeding and transform to the inactive pupal stage and later to moths. The male moths leave their bags in September or October and fly about in search of the wingless females. The females remain in their bags, are fertilized there by the males, and later deposit several hundred eggs in each bag.

### Control

The simplest method of controlling this insect on small trees is to remove and destroy any overwintering bags, since the eggs in one bag may produce enough caterpillars to defoliate a small tree. In some cases it is also practical to remove and destroy bags containing caterpillars during the feeding season.

When hand picking is not practical, infested trees should be sprayed while the caterpillars are still small and easily killed--usually early in May in the South and late in May or early in June farther north. Lead arsenate is effective for killing the younger caterpillars when it is applied at the rate of 3 level tablespoonfuls in 1 gallon of water, or 4 pounds in 100 gallons. It is more effective than DDT for this insect. The addition of linseed oil, 1 teaspoonful to 1 gallon or 1 pint to 100 gallons of the lead arsenate mixture, will make the spray adhere to the foliage and remain effective for a longer period.

If the infestation is not discovered until the caterpillars are nearing maturity, it is much more difficult to kill them by spraying. Increasing the dosage of lead arsenate by at least one-half will often help to give better results.

Some of the caterpillars may fasten their bags to the twigs before they die. The presence of bags on the trees a week or more after spraying should therefore not be taken as positive evidence of failure in control. If, however, they are found to contain living caterpillars that are still feeding, it may be advisable to repeat the spray treatment.

Evergreens that have been completely defoliated are not likely to recover, and it is usually best to remove them. When only a few branches are affected, it is often possible to save the trees by careful pruning of the most severely damaged twigs.





